

SEQUENCE LISTING

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<110> Birkett, Ashley J.

<120> IMMUNOGENIC HBc CHIMER PARTICLES STABILIZED WITH AN N-TERMINAL
CYSTEINE

<130> ICC-130.0 4564/85124

<140> NOT YET ASSIGNED

<141> 2002-02-21

<150> 09/930,915

<151> 2001-08-15

<160> 290

<170> PatentIn version 3.1

<210> 1

<211> 183

<212> PRT

<213> Hepatitis B virus

<400> 1

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175

Gln Ser Arg Glu Ser Gln Cys
180

<210> 2

<211> 185

<212> PRT

<213> Hepatitis B virus

<400> 2

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu

Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Ser
165 170 175

Gln Ser Arg Glu Ser Gln Cys
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<210> 5

<211> 183

<212> PRT

<213> Marmota monax

<400> 5

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu
1 5 10 15

Asn Phe Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp
20 25 30

Thr Ala Thr Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys
35 40 45

Ser Pro His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Asp Glu
50 55 60

Leu Thr Lys Leu Ile Ala Trp Met Ser Ser Asn Ile Thr Ser Glu Gln
65 70 75 80

Val Arg Thr Ile Ile Val Asn His Val Asn Asp Thr Trp Gly Leu Lys
85 90 95

Val Arg Gln Ser Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln
100 105 110

His Thr Val Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Ala Pro Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu His Thr Val Ile Arg Arg Arg Gly Gly Ala Arg Ala Ser Arg Ser
145 150 155 160

Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro
165 170 175

Arg Arg Arg Arg Ser Gln Cys
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<210> 6

<211> 217

<212> PRT

<213> *Spermophilus variegatus*

<400> 6

Met Tyr Leu Phe His Leu Cys Leu Val Phe Ala Cys Val Pro Cys Pro
1 5 10 15

Thr Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp
20 25 30

Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu Asn Phe
35 40 45

Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp Thr Ala
50 55 60

Ala Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro

80

95

110

125

140

160

175

190

205

215

7

51

DNA

Artificial Sequence

$\langle 220 \rangle$

<223> plasmid pkk223

7

ttcacacagg aaacagaatt cccgggggatc cgtcgacctg cagccaagct t

51

8

38

<212> DNA

<213> Artificial Sequence

<220>

<223> plasmid pkk223

<400> 8

ttcacataag gaggaaaaaa ccatgggatc cgaagctt

38

<210> 9

<211> 15

<212> PRT

<213> Streptococcus pneumoniae

<400> 9

Lys Leu Glu Glu Leu Ser Asp Lys Ile Asp Glu Leu Asp Ala Glu
1 5 10 15

<210> 10

<211> 35

<212> PRT

<213> Streptococcus pneumoniae

<400> 10

Gln Lys Lys Tyr Asp Glu Asp Gln Lys Lys Thr Glu Glu Lys Ala Ala
1 5 10 15

Leu Glu Lys Ala Ala Ser Glu Glu Met Asp Lys Ala Val Ala Ala Val
20 25 30

Gln Gln Ala
35

<210> 11

<211> 27

<212> PRT

<213> Influenza A virus

<400> 14

Tyr Arg Asn Leu Leu Trp Leu Thr Glu Lys
1 5 10

<210> 15

<211> 23

<212> PRT

<213> Influenza A virus

<400> 15

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Cys Asn Gly Ser Ser Asp
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<210> 16

<211> 23

<212> PRT

<213> Influenza A virus

<400> 16

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Cys Asn Asp Ser Ser Asp
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<210> 17

<211> 21

<212> PRT

<213> Influenza A virus

<400> 17

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<211> 19

<213> Influenza A virus

Glu Gln Gln Ser Ala Val Asp Ala Asp Asp Ser His Phe Val Ser Ile
1 5 10 15

<210> 19

<212> PRT

<400> 19

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Ser Leu Leu Thr Glu
1 5 10 15

Ser Asp

<211> 23

<213> Influenza A virus

<400> 20

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ser
1 5 10 15

Arg Cys Asn Asp Ser Ser Asp
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<210> 21

<211> 23

<212> PRT

<213> Influenza A virus

<400> 21

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Ser Asn Asp Ser Ser Asp
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<210> 22

<211> 23

<212> PRT

<213> Influenza A virus

<400> 22

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Ala Asn Asp Ser Ser Asp
20

<210> 23

<211> 23

<212> PRT

<213> Influenza A virus

<400> 23

Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ala
1 5 10 15

Arg Cys Asn Asp Ser Ser Asp
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<210> 24

<211> 24

<212> PRT

<213> Influenza A virus

<400> 24

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp
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<210> 25

<211> 24

<212> PRT

<213> Influenza A virus

<400> 25

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ser Arg Ser Asn Asp Ser Ser Asp
20

<210> 26

<211> 35

<212> PRT

<213> Influenza A virus

<400> 26

Met Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu
1 5 10 15

Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Leu Gly Trp Leu
20 25 30

Trp Gly Ile
35

<210> 27

<211> 24

<212> PRT

<213> Influenza A virus

<400> 27

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ala Arg Ala Asn Asp Ser Ser Asp
20

<210> 28

<211> 24

<212> PRT

<213> Influenza A virus

<400> 28

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Ala Asn Asp Ser Ser Asp
20

<210> 29

<211> 24

<212> PRT

<213> Influenza A virus

<400> 29

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ala Arg Cys Asn Asp Ser Ser Asp
20

<210> 30

<211> 24

<212> PRT

<213> Influenza A virus

<400> 30

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Ser Asn Asp Ser Ser Asp
20

<210> 31

<211> 24

<212> PRT

<213> Influenza A virus

<400> 31

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ser Arg Cys Asn Asp Ser Ser Asp
20

<210> 32

<211> 24

<212> PRT

<213> Hepatitis B virus

<220>

<221> MISC_FEATURE

<222> (1)..(1)

<223> Xaa at position 1 is methionine or absent. If methionine then Xaa in positions 2 through 8 are not absent

<220>

<221> MISC_FEATURE

<222> (2)..(2)

<223> Xaa at position 2 is serine or absent. If serine then Xaa in positions 3 through 8 are not absent.

<220>

<221> MISC_FEATURE

<222> (3)..(3)

<223> Xaa at position 3 is leucine or absent. If leucine then Xaa in positions 4 through 8 are not absent.

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Xaa at position 4 is leucine or absent. If leucine then Xaa in positions 5 through 8 are not absent.

<220>

<221> MISC_FEATURE

<222> (5)..(5)

<223> Xaa at position 5 is threonine or absent. If threonine then Xaa in positions 6 through 8 are not absent.

<220>

<221> MISC_FEATURE

<222> (6)..(6)

<223> Xaa at position 6 is glutamic acid or absent. If glutamic acid then Xaa in positions 7 through 8 are not absent.

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Xaa at position 7 is valine or absent. If valine then Xaa in position 8 is not absent.

<220>

<221> MISC_FEATURE

<222> (8)..(8)

<223> Xaa at position 8 is glutamic acid or absent.

<220>

<221> MISC_FEATURE

<222> (15)..(15)

<223> Xaa at position 15 is tryptophan or absent.

<220>

<221> MISC_FEATURE

<222> (16)..(16)

<223> Xaa at position 16 is glycine or absent. If glycine then Xaa in position 15 is not absent.

<220>

<221> MISC_FEATURE

<222> (17)..(17)

<223> Xaa at position 17 is absent or present, if present Xaa in position 17 is cysteine, serine or alanine. If Xaa in position 17 is p

resent then positions 15 through 16 are not absent.

<220>

<221> MISC_FEATURE

<222> (18)..(18)

<223> Xaa at position 18 is arginine or absent. If arginine then Xaa in positions 15 through 17 are not absent.

<220>

<221> MISC_FEATURE

<222> (19)..(19)

<223> Xaa at position 19 is absent or present, if present Xaa in position 19 is cysteine, serine or alanine. If Xaa in position 19 is present then positions 15 through 18 are not absent.

<220>

<221> MISC_FEATURE

<222> (20)..(20)

<223> Xaa at position 20 is asparagine or absent. If asparagine then Xaa in positions 15 through 19 are not absent.

<220>

<221> MISC_FEATURE

<222> (21)..(21)

<223> Xaa at position 21 is aspartic acid or absent. If aspartic acid then Xaa in positions 15 through 20 are not absent.

<220>

<221> MISC_FEATURE

<222> (22)..(22)

<223> Xaa at position 22 is serine or absent. If serine then Xaa in positions 15 through 21 are not absent.

<220>

<221> MISC_FEATURE

<222> (23)..(23)

<223> Xaa at position 23 is serine or absent. If serine then Xaa in positions 15 through 22 are not absent.

<220>

<221> MISC_FEATURE

<222> (24)..(24)

<223> Xaa at position 24 is aspartic acid or absent. If aspartic acid then Xaa in positions 15 through 23 are not absent.

<400> 32

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Thr Pro Ile Arg Asn Glu Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
20

<210> 33

<211> 142

<212> PRT

<213> Yersinia pestis

<400> 33

Asp Ile Leu Lys Val Ile Val Asp Ser Met Asn His His Gly Asp Ala
1 5 10 15

Arg Ser Lys Leu Arg Glu Glu Leu Ala Glu Leu Thr Ala Glu Leu Lys
20 25 30

Ile Tyr Ser Val Ile Gln Ala Glu Ile Asn Lys His Leu Ser Ser Ser
35 40 45

Gly Thr Ile Asn Ile His Asp Lys Ser Ile Asn Leu Met Asp Lys Asn
50 55 60

Leu Tyr Gly Tyr Thr Asp Glu Glu Ile Phe Lys Ala Ser Ala Glu Tyr

<213> Haemophilus influenzae

<400> 36

Asn Asp Glu Ala Ala Tyr Ser Lys Asn Arg Arg Ala Val Leu Ala Tyr
1 5 10 15

<210> 37

<211> 28

<212> PRT

<213> Moraxella catarrhalis

<400> 37

Leu Asp Ile Glu Lys Asp Lys Lys Lys Arg Thr Asp Glu Gln Leu Gln
1 5 10 15

Ala Glu Leu Asp Asp Lys Tyr Ala Gly Lys Gly Tyr
20 25

<210> 38

<211> 28

<212> PRT

<213> Moraxella catarrhalis

<400> 38

Leu Asp Ile Glu Lys Asn Lys Lys Lys Arg Thr Glu Ala Glu Leu Gln
1 5 10 15

Ala Glu Leu Asp Asp Lys Tyr Ala Gly Lys Gly Tyr
20 25

<210> 39

<211> 28

<212> PRT

<213> Moraxella catarrhalis

<400> 39

Ile Asp Ile Glu Lys Lys Gly Lys Ile Arg Thr Glu Ala Glu Leu Leu
1 5 10 15

Ala Glu Leu Asn Lys Asp Tyr Pro Gly Gln Gly Tyr
20 25

<210> 40

<211> 25

<212> PRT

<213> Porphyromonas gingivalis

<400> 40

Gly Val Ser Pro Lys Val Cys Lys Asp Val Thr Val Glu Gly Ser Asn
1 5 10 15

Glu Phe Ala Pro Val Gln Asn Leu Thr
20 25

<210> 41

<211> 20

<212> PRT

<213> Porphyromonas gingivalis

<400> 41

Arg Ile Gln Ser Thr Trp Arg Gln Lys Thr Val Asp Leu Pro Ala Gly
1 5 10 15

Thr Lys Tyr Val
20

<210> 42

<211> 21

<212> PRT

<213> Trypanosoma cruzi

<400> 42

Lys Ala Ala Ile Ala Pro Ala Lys Ala Ala Ala Pro Ala Lys Ala
1 5 10 15

Ala Thr Ala Pro Ala
20

<210> 43

<211> 16

<212> PRT

<213> Plasmodium falciparum

<400> 43

Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

<210> 44

<211> 24

<212> PRT

<213> Plasmodium falciparum

<400> 44

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Ala Asn Pro Asn Val Asp Pro
20

<210> 45

<211> 20

<212> PRT

<213> Plasmodium falciparum

<400> 45

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Ala Asn Pro

20

<210> 46

<211> 20

<212> PRT

<213> Plasmodium falciparum

<400> 46

Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val Asp Pro
1 5 10 15

Asn Ala Asn Pro
20

<210> 47

<211> 28

<212> PRT

<213> Plasmodium falciparum

<400> 47

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro
20 25

<210> 48

<211> 20

<212> PRT

<213> Plasmodium falciparum

<400> 48

Asn	Pro	Asn	Val	Asp	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	Asn	Ala
1				5				10						15	

Asn Pro Asn Val
20

<210> 49

<211> 22

<212> PRT

<213> Plasmodium falciparum

<400> 49

Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
1 5 10 15

Asn Pro Asn Val Asp Pro
20

<210> 50

<211> 24

<212> PRT

<213> Plasmodium falciparum

<400> 50

Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala
1 5 10 15

Asn Pro Asn Val Asp Pro Asn Ala
20

<210> 51

<211> 18

<212> PRT

<213> Plasmodium falciparum

<400> 51

Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Val

<210> 52

<211> 20

<212> PRT

<213> Plasmodium falciparum

<400> 52

Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Val Asp Pro
20

<210> 53

<211> 22

<212> PRT

<213> Plasmodium falciparum

<400> 53

Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
1 5 10 15

Asn Val Asp Pro Asn Ala
20

<210> 54

<211> 16

<212> PRT

<213> Plasmodium falciparum

<400> 54

Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val
1 5 10 15

<210> 55

<211> 18

<212> PRT

<213> Plasmodium falciparum

<400> 55

Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val
1 5 10 15

Asp Pro

<210> 56

<211> 20

<212> PRT

<213> Plasmodium falciparum

<400> 56

Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val
1 5 10 15

Asp Pro Asn Ala
20

<210> 57

<211> 19

<212> PRT

<213> Plasmodium vivax

<400> 57

Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln
1 5 10 15

Pro Ala Gly

<210> 58

<211> 18

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED
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<213> Plasmodium vivax

Pro Gly

<213> Plasmodium vivax

Gln Glu Gly Gly Ala Ala
20

<211> 36

<212> PRT

<213> Plasmodium vivax

<400> 64

Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln
1 5 10 15

Pro Gly Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp
20 25 30

Asp Gln Pro Gly
35

<210> 65

<211> 16

<212> PRT

<213> Plasmodium berghei

<400> 65

Asp Pro Pro Pro Pro Asn Pro Asn Asp Pro Pro Pro Pro Asn Pro Asn
1 5 10 15

<210> 66

<211> 24

<212> PRT

<213> Plasmodium yoelii

<400> 66

Gln Gly Pro Gly Ala Pro Gln Gly Pro Gly Ala Pro Gln Gly Pro Gly
1 5 10 15

Ala Pro Gln Gly Pro Gly Ala Pro
20

<210> 67

<211> 15

<212> PRT

<213> Streptococcus sobrinus

<400> 67

Lys Pro Arg Pro Ile Tyr Glu Ala Lys Leu Ala Gln Asn Gln Lys
1 5 10 15

<210> 68

<211> 16

<212> PRT

<213> Streptococcus sobrinus

<400> 68

Ala Lys Ala Asp Tyr Glu Ala Lys Leu Ala Gln Tyr Glu Lys Asp Leu
1 5 10 15

<210> 69

<211> 9

<212> PRT

<213> Shigella flexneri

<400> 69

Lys Asp Arg Thr Leu Ile Glu Gln Lys
1 5

<210> 70

<211> 15

<212> PRT

<213> respiratory syncytial virus

<400> 70

Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys
1 5 10 15

<210> 71

<211> 25

<212> PRT

<213> Entamoeba histolytica

<400> 71

Val Glu Cys Ala Ser Thr Val Cys Gln Asn Asp Asn Ser Cys Pro Ile
1 5 10 15

Ile Ala Asp Val Glu Lys Cys Asn Gln
20 25

<210> 72

<211> 34

<212> PRT

<213> Schistosoma japonicum

<400> 72

Asp Leu Gln Ser Glu Ile Ser Leu Ser Leu Glu Asn Gly Glu Leu Ile
1 5 10 15

Arg Arg Ala Lys Ser Ala Glu Ser Leu Ala Ser Glu Leu Gln Arg Arg
20 25 30

Val Asp

<210> 73

<211> 34

<212> PRT

<213> Schistosoma mansoni

<400> 73

Asp Leu Gln Ser Glu Ile Ser Leu Ser Leu Glu Asn Ser Glu Leu Ile
1 5 10 15

Arg Arg Ala Lys Ala Ala Glu Ser Leu Ala Ser Asp Leu Gln Arg Arg

Glu

<210> 77

<211> 17

<212> PRT

<213> Ebola virus

<400> 77

Gly Lys Leu Gly Leu Ile Thr Asn Thr Ile Ala Gly Val Ala Val Leu
1 5 10 15

Ile

<210> 78

<211> 14

<212> PRT

<213> Escherichia coli

<400> 78

Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly Cys Asn
1 5 10

<210> 79

<211> 18

<212> PRT

<213> Escherichia coli

<400> 79

Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly
1 5 10 15

Cys Asn

<210> 80

<211> 18

<212> PRT

<213> Escherichia coli

<400> 80

Ser Ser Asn Tyr Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly
1 5 10 15

Cys Asn

<210> 81

<211> 42

<212> PRT

<213> Alzheimer's disease b-Amyloid

<400> 81

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
35 40

<210> 82

<211> 17

<212> PRT

<213> Alzheimer's disease b-Amyloid

<400> 82

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu

<210> 83

<211> 11

<212> PRT

<213> Alzheimer's disease b-Amyloid

<400> 83

Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
1 5 10

<210> 84

<211> 33

<212> PRT

<213> Alzheimer's disease b-Amyloid

<400> 84

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly

<210> 85

<211> 13

<212> PRT

<213> Neisseria meningitidis

<400> 85

Tyr Val Ala Val Glu Asn Gly Val Ala Lys Lys Val Ala
1 5 10

<210> 86

<211> 15

<212> PRT

<213> Neisseria meningitidis

<400> 86

His Phe Val Gln Gln Thr Pro Lys Ser Gln Pro Thr Leu Val Pro
1 5 10 15

<210> 87

<211> 13

<212> PRT

<213> Neisseria meningitidis

<400> 87

His Val Val Val Asn Asn Lys Val Ala Thr His Val Pro
1 5 10

<210> 88

<211> 12

<212> PRT

<213> Neisseria meningitidis

<400> 88

Pro Leu Gln Asn Ile Gln Pro Gln Val Thr Lys Arg
1 5 10

<210> 89

<211> 21

<212> PRT

<213> Neisseria meningitidis

<400> 89

Ala Gln Ala Ala Asn Gly Gly Ala Ala Ser Gly Gln Val Lys Val Thr

1 5 10 15

Lys Val Thr Lys Ala
20

<210> 90

<211> 10

<212> PRT

<213> Neisseria meningitidis

<400> 90

Tyr Val Asp Glu Gln Ser Lys Tyr His Ala
1 5 10

<210> 91

<211> 15

<212> PRT

<213> Neisseria meningitidis

<400> 91

His Phe Val Gln Asn Lys Gln Asn Gln Pro Pro Thr Leu Val Pro
1 5 10 15

<210> 92

<211> 18

<212> PRT

<213> Neisseria meningitidis

<400> 92

Lys Pro Ser Ser Thr Asn Ala Lys Thr Gly Asn Lys Val Glu Val Thr
1 5 10 15

Lys Ala

<210> 93

<211> 17

<212> PRT

<213> Neisseria meningitidis

<400> 93

Tyr	Trp	Thr	Thr	Val	Asn	Thr	Gly	Ser	Ala	Thr	Thr	Thr	Thr	Phe	Val
1				5					10					15	

Pro

<210> 94

<211> 11

<212> PRT

<213> Neisseria meningitidis

<400> 94

Tyr	Val	Asp	Glu	Lys	Lys	Lys	Met	Val	His	Ala
1				5					10	

<210> 95

<211> 13

<212> PRT

<213> Neisseria meningitidis

<400> 95

His	Tyr	Thr	Arg	Gln	Asn	Asn	Ala	Asp	Val	Phe	Val	Pro
1				5					10			

<210> 96

<211> 14

<212> PRT

<213> Neisseria meningitidis

<400> 96

<400> 100

Gln Pro Gln Thr Ala Asn Thr Gln Gln Gly Gly Lys Val Lys Val Thr
1 5 10 15

Lys Ala

<210> 101

<211> 18

<212> PRT

<213> Neisseria meningitidis

<400> 101

Gln Pro Gln Val Thr Asn Gly Val Gln Gly Asn Gln Val Lys Val Thr
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Lys Ala

<210> 102

<211> 18

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<213> Neisseria meningitidis

<400> 102

Gln Pro Ser Lys Ala Gln Gly Gln Thr Asn Asn Gln Val Lys Val Thr
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Lys Ala

<210> 103

<211> 20

<212> PRT

<213> Neisseria meningitidis

<400> 103

Pro Pro Ser Ser Asn Gln Gly Lys Asn Gln Ala Gln Thr Gly Asn Thr
1 5 10 15

Val Thr Lys Ala
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<210> 104

<211> 18

<212> PRT

<213> Neisseria meningitidis

<400> 104

Pro Pro Ser Lys Ser Gln Gly Lys Thr Gly Asn Gln Val Lys Val Thr
1 5 10 15

Lys Ala

<210> 105

<211> 18

<212> PRT

<213> Neisseria meningitidis

<400> 105

Pro Pro Ser Lys Ser Gln Gly Thr Asn Asn Asn Gln Val Lys Val Thr
1 5 10 15

Lys Ala

<210> 106

<211> 18

<212> PRT

<213> Neisseria meningitidis

<400> 106

Pro Pro Ser Lys Ser Gln Pro Gly Gln Val Lys Val Thr Lys Val Thr
1 5 10 15

Lys Ala

<210> 107

<211> 24

<212> PRT

<213> Neisseria meningitidis

<400> 107

Gln Leu Gln Leu Thr Glu Gln Pro Ser Ser Thr Asn Gly Gln Thr Gly
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Asn Gln Val Lys Val Thr Lys Ala
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<210> 108

<211> 24

<212> PRT

<213> Neisseria meningitidis

<400> 108

Gln Leu Gln Leu Thr Glu Ala Pro Ser Lys Ser Gln Gly Ala Ala Ser
1 5 10 15

Asn Gln Val Lys Val Thr Lys Ala
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<210> 109

<211> 19

<212> PRT

<213> Neisseria meningitidis

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His Val Ala

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<213> Neisseria meningitidis

Ser Ala Tyr Thr Pro Ala His Phe Val Gln Asn Lys Gln Asn Asn Asn
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<213> *Neisseria meningitidis*

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Val Glu Gly Arg Asn Tyr Gln Leu Gln Leu Thr Glu
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<211> 12

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<213> Neisseria meningitidis

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Pro Ala Gln Asn Ser Lys Ser Ala Tyr Thr Pro Ala

1 5 10

<210> 113

<211> 22

<212> PRT

<213> Neisseria meningitidis

<400> 113

Gln Leu Gln Leu Thr Glu Pro Pro Ser Lys Asn Gln Ala Gln Thr Gln
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Asn Lys Val Thr Lys Ala
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<210> 114

<211> 16

<212> PRT

<213> Neisseria meningitidis

<400> 114

Gly Arg Asp Ala Phe Glu Leu Phe Leu Leu Gly Ser Gly Ser Asp Glu
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<210> 115

<211> 31

<212> PRT

<213> Neisseria meningitidis

<400> 115

Arg His Ala Asn Val Gly Arg Asp Ala Phe Glu Leu Phe Leu Leu Gly
1 5 10 15

Ser Gly Ser Asp Glu Ala Lys Gly Thr Asp Pro Leu Lys Asn His
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<210> 116

<211> 18

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<213> Neisseria meningitidis

<400> 116

Gly Arg Asp Ala Phe Asn Leu Phe Leu Leu Gly Arg Ile Gly Asp Asp
1 5 10 15

Asp Glu

<210> 117

<211> 17

<212> PRT

<213> Neisseria meningitidis

<400> 117

Gly Arg Asn Ala Phe Glu Leu Phe Leu Ile Gly Ser Ala Thr Ser Asp
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Gln

<210> 118

<211> 15

<212> PRT

<213> Neisseria meningitidis

<400> 118

Gln Val Lys Val Thr Lys Ala Lys Ser Arg Ile Arg Thr Lys Ile
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Gln Thr

<210> 123

<211> 21

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<213> Neisseria meningitidis

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Gly Lys Val Asn Thr Val Lys Asn Val Arg Ser Gly Glu Leu Ser Ala
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Gly Val Arg Val Lys
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<213> Neisseria meningitidis

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Gly Lys Val Asn Thr Val Lys Asn Val Arg Ser Gly Glu Leu Ser Val
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<213> Artificial Sequence

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Gly Ser Gly Asp Gly Glu Gly Gly
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Gly Gly Gly Gly Ser Gly Gly Gly Gly Thr
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<400> 127

Gly Gly Gly Gly Ser Gly Gly Gly Gly
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<213> HIV

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Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys Cys
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<213> Corynebacterium diphtheriae

<400> 129

Phe Gln Val Val His Asn Ser Tyr Asn Arg Pro Ala Tyr Ser Pro Gly
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Cys

<210> 130

<211> 25

<212> PRT

<213> Borrelia burgdorferi

<400> 130

Val Glu Ile Lys Glu Gly Thr Val Thr Leu Lys Arg Glu Ile Asp Lys
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Asn Gly Lys Val Thr Val Ser Leu Cys
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<210> 131

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<213> Borrelia burgdorferi

<400> 131

Thr Leu Ser Lys Asn Ile Ser Lys Ser Gly Glu Val Ser Val Glu Leu
1 5 10 15

Asn Asp Cys

<210> 132

<211> 11

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<213> Influenza A virus

<400> 132

Ser Ser Val Ser Ser Phe Glu Arg Phe Glu Cys
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<210> 133

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<213> Influenza A virus

<400> 133

Leu Ile Asp Ala Leu Leu Gly Asp Pro Cys
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<213> Influenza A virus

<400> 134

Thr Leu Ile Asp Ala Leu Leu Gly Cys
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<211> 21

<212> PRT

<213> Trypanosoma cruzi

<400> 135

Ser, His Asn Phe Thr Leu Val Ala Ser Val Ile Ile Glu Glu Ala Pro

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<212> PRT

<213> Plasmodium falciparum

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Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro
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Cys Ser Val Thr
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<210> 140

<211> 19

<212> PRT

<213> Plasmodium vivax

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Tyr Leu Asp Lys Val Arg Ala Thr Val Gly Thr Glu Trp Thr Pro Cys
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Ser Val Thr

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<212> PRT

<213> Plasmodium yoelii

<400> 141

Glu Phe Val Lys Gln Ile Ser Ser Gln Leu Thr Glu Glu Trp Ser Gln
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Cys Ser Val Thr
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<210> 142

Asn Val Cys

<210> 149

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 149

Thr Pro Arg Val Ser Tyr Ala His Gly Phe Lys Gly Leu Val Asp Asp
1 5 10 15

Ala Asp Cys

<210> 150

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 150

Arg Phe Gly Asn Ala Val Pro Arg Ile Ser Tyr Ala His Gly Phe Asp
1 5 10 15

Phe Ile Cys

<210> 151

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 151

Ala Phe Lys Tyr Ala Arg His Ala Asn Val Gly Arg Asn Ala Phe Glu
1 5 10 15

Leu Phe Cys

<213> Neisseria meningitidis

Ile Asn Ala Cys
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<213> Neisseria meningitidis

<213> Neisseria meningitidis

<212> PRT

<211> 16

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<213> Neisseria meningitidis

<400> 159

Ser	Val	Gln	Phe	Val	Pro	Ala	Gln	Asn	Ser	Lys	Ser	Ala	Tyr	Lys	Cys
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<210> 160

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<212> PRT

<213> Neisseria meningitidis

<400> 160

Asn	Tyr	Ala	Phe	Lys	Tyr	Ala	Lys	His	Ala	Asn	Val	Gly	Arg	Asp	Cys
1				5					10					15	

<210> 161

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<212> PRT

<213> Neisseria meningitidis

<400> 161

Ala	His	Gly	Phe	Asp	Phe	Ile	Glu	Arg	Gly	Lys	Lys	Gly	Glu	Asn	Cys
1				5					10					15	

<210> 162

<211> 16

<212> PRT

<213> Neisseria meningitidis

<400> 162

Gly	Val	Asp	Tyr	Asp	Phe	Ser	Lys	Arg	Thr	Ser	Ala	Ile	Val	Ser	Cys
1				5					10					15	

<210> 163

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<212> PRT

<213> Neisseria meningitidis

<400> 163

His	Asp	Asp	Met	Pro	Val	Ser	Val	Arg	Tyr	Asp	Ser	Pro	Asp	Phe	Cys
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<210> 164

<211> 27

<212> PRT

<213> Neisseria meningitidis

<400> 164

Arg	Phe	Gly	Asn	Ala	Val	Pro	Arg	Ile	Ser	Tyr	Ala	His	Gly	Phe	Asp
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Phe	Ile	Glu	Arg	Gly	Lys	Lys	Gly	Glu	Asn	Cys
			20					25		

<210> 165

<211> 24

<212> PRT

<213> Neisseria meningitidis

<400> 165

Asn	Tyr	Ala	Phe	Lys	Tyr	Ala	Lys	His	Ala	Asn	Val	Gly	Arg	Asp	Ala
1				5					10					15	

Phe	Asn	Leu	Phe	Leu	Leu	Gly	Cys
			20				

<210> 166

<211> 26

<212> PRT

<213> Neisseria meningitidis

<400> 169

Ile Tyr Asp Phe Lys Leu Asn Asp Lys Phe Asp Lys Phe Lys Pro Tyr
1 5 10 15

Ile Gly Cys

<210> 170

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 170

Leu Ser Ala Ile Tyr Asp Phe Lys Leu Asn Asp Lys Phe Lys Pro Tyr
1 5 10 15

Ile Gly Cys

<210> 171

<211> 19

<212> PRT

<213> Neisseria meningitidis

<400> 171

Asn Gly Trp Tyr Ile Asn Pro Trp Ser Glu Val Lys Phe Asp Leu Asn
1 5 10 15

Ser Arg Cys

<210> 172

<211> 549

<213> Hepatitis B virus

<213> Hepatitis B virus

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2019年1月1日

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<213> Marmota monax

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<212> DNA

<213> *Spermophilus variegatus*

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Thr Gly

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 <213> Hepatitis B virus

<400> 180

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38

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31

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39

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<213> Hepatitis B virus

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Met Gly Cys Glu Leu Asp Pro Tyr Lys Glu Phe Gly
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<213> Plasmodium falciparum

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<213> Plasmodium falciparum

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Pro Asn Ala Asn Pro Glu Leu
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<213> Plasmodium falciparum

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<211> 61

<213> Plasmodium falciparum

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<213> Plasmodium falciparum

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<212> DNA

<213> Plasmodium falciparum

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<213> Plasmodium falciparum

<400> 205

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1 5 10 15

Pro Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Glu Leu
20 25 30

<210> 206

<211> 93

<212> DNA

<213> Plasmodium falciparum

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<211> 85

<212> DNA

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<210> 208

<211> 23

<212> PRT

<213> Plasmodium falciparum

<400> 208

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1 5 10 15

Ala Asn Pro Asn Val Glu Leu
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<210> 209

<211> 69

<212> DNA

<213> Plasmodium falciparum

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tgttgagct 69

<210> 210

<211> 61

<212> DNA

<213> Plasmodium falciparum

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t 61

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<211> 25

<212> PRT

<213> Plasmodium falciparum

<400> 211

Ile Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
1 5 10 15

Ala Asn Pro Asn Val Asp Pro Glu Leu
20 25

<210> 212

<211> 75

<212> DNA

<213> Plasmodium falciparum

<400> 212

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tggtgaccct gagct 75

<210> 213

<211> 67

<212> DNA

<213> Plasmodium falciparum

<400> 213

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<210> 214

<211> 27

<212> PRT

<213> Plasmodium falciparum

<400> 214

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1 5 10 15

Ala Asn Pro Asn Val Asp Pro Asn Ala Glu Leu
20 25

<210> 215

<211> 81

<212> DNA

<213> Plasmodium falciparum

<400> 215
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tggtgaccct aatgctgagc t 81

<210> 216

<211> 73

<212> DNA

<213> Plasmodium falciparum

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<210> 217

<211> 21

<212> PRT

<213> Plasmodium falciparum

<400> 217

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Pro Asn Val Glu Leu

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<210> 218

<211> 63

<212> DNA

<213> Plasmodium falciparum

<400> 218

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gct 63

<210> 219

<211> 55

<212> DNA

<213> Plasmodium falciparum

<400> 219

caacattcgg gttggcggtt ggattagcgt taggggtggc atttggatcc acgtt 55

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<212> PRT

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<400> 220

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Pro Asn Val Asp Pro Glu Leu
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<210> 221

<211> 69

<212> DNA

<213> Plasmodium falciparum

<400> 221
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ccctgagct 69

<210> 222

<211> 61

<212> DNA

<213> Plasmodium falciparum

<400> 222
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t 61

<210> 223

<211> 25

<212> PRT

<213> Plasmodium falciparum

<400> 223

Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn
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Pro Asn Val Asp Pro Asn Ala Glu Leu
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<211> 75

<212> DNA

<213> Plasmodium falciparum

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<210> 225

<211> 67

<212> DNA

<213> Plasmodium falciparum

<400> 225

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ccacggtt 67

<210> 226

<211> 19

<212> PRT

<213> Plasmodium falciparum

<400> 226

Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn
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Val Glu Leu

<210> 227

<211> 57

<212> DNA

<213> Plasmodium falciparum

<400> 227

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<210> 228

<211> 49

<212> DNA

<213> Plasmodium falciparum

<400> 228

49

<210> 229

<211> 21

<212> PRT

<213> Plasmodium falciparum

<400> 229

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1 5 10 15

Val Asp Pro Glu Leu
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<210> 230

<211> 63

<212> DNA

<213> Plasmodium falciparum

<400> 230

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gct 63

<210> 231

<211> 55

<212> DNA

<213> Plasmodium falciparum

<400> 231

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<210> 232

<211> 23

<212> PRT

<213> Plasmodium falciparum

<400> 232

Val Asp Pro Asn Ala Glu Leu
20

<210> 233

<211> 69

<212> DNA

<213> Plasmodium falciparum

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tgccgagct                                         69
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<210> 234

<211> 61

<212> DNA

<213> Plasmodium falciparum

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c 61
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<210> 235

<211> 21

<212> PRT

<213> Plasmodium falciparum

<400> 235

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Pro Cys Ser Val Thr

20

<210> 236

<211> 69

<212> DNA

<213> Plasmodium falciparum

<400> 236

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tacctagta 69

<210> 237

<211> 69

<212> DNA

<213> Plasmodium falciparum

<400> 237

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cagatatctc 69

<210> 238

<211> 24

<212> PRT

<213> Plasmodium vivax

<400> 238

Ile Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala
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Ala Gly Gln Pro Ala Gly Glu Leu
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<210> 239

<211> 72

<212> DNA

<213> Plasmodium vivax

<400> 239
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<210> 240

<211> 64

<212> DNA

<213> Plasmodium vivax

<400> 240
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ccgg 64

<210> 241

<211> 21

<212> PRT

<213> Plasmodium vivax

<400> 241

Ile Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln
1 5 10 15

Pro Ala Gly Glu Leu
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<210> 242

<211> 63

<212> DNA

<213> Plasmodium vivax

<400> 242
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gct 63

<400> 246
cccctggttg atcaccgcgc cggtttgccc cgggtgatt accggcgccg ttcgc 55

<210> 247

<211> 21

<212> PRT

<213> Plasmodium vivax

<400> 247

Ile Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp
1 5 10 15

Gln Pro Gly Glu Leu
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<210> 248

<211> 63

<212> DNA

<213> Plasmodium vivax

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gct 63

<210> 249

<211> 55

<212> DNA

<213> Plasmodium vivax

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<210> 250

<211> 39

<212> PRT

Ile Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala Ala Pro Gly Ala
1 5 10 15

Asn Gln Glu Gly Gly Ala Ala Glu Leu
20 25

<210> 254

<211> 75

<212> DNA

<213> Plasmodium vivax

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cggtgcagcg gagct 75

<210> 255

<211> 67

<212> DNA

<213> Plasmodium vivax

<400> 255
ccgctgcacc gccttcttga ttggctcctg gcgctgcagc cccaccttcc tggttggcgc 60
ccggcgc 67

<210> 256

<211> 24

<212> PRT

<213> Hepatitis B virus

<400> 256

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp
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<210> 257

<211> 27

<212> PRT

<213> Hepatitis B virus

<400> 257

Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp
1 5 10 15

Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu
20 25

<210> 258

<211> 27

<212> PRT

<213> Hepatitis B virus

<400> 258

Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp
1 5 10 15

Gly Ala Arg Ala Asn Asp Ser Ser Asp Glu Leu
20 25

<210> 259

<211> 35

<212> PRT

<213> Hepatitis B virus

<400> 259

Met Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu
1 5 10 15

Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Leu Gly Trp Leu
20 25 30

Trp Gly Ile

1842-43. 1843-44. 1844-45. 1845-46. 1846-47. 1847-48. 1848-49. 1849-50. 1850-51. 1851-52. 1852-53. 1853-54. 1854-55. 1855-56. 1856-57. 1857-58. 1858-59. 1859-60. 1860-61. 1861-62. 1862-63. 1863-64. 1864-65. 1865-66. 1866-67. 1867-68. 1868-69. 1869-70. 1870-71. 1871-72. 1872-73. 1873-74. 1874-75. 1875-76. 1876-77. 1877-78. 1878-79. 1879-80. 1880-81. 1881-82. 1882-83. 1883-84. 1884-85. 1885-86. 1886-87. 1887-88. 1888-89. 1889-90. 1890-91. 1891-92. 1892-93. 1893-94. 1894-95. 1895-96. 1896-97. 1897-98. 1898-99. 1899-00. 1900-01. 1901-02. 1902-03. 1903-04. 1904-05. 1905-06. 1906-07. 1907-08. 1908-09. 1909-10. 1910-11. 1911-12. 1912-13. 1913-14. 1914-15. 1915-16. 1916-17. 1917-18. 1918-19. 1919-20. 1920-21. 1921-22. 1922-23. 1923-24. 1924-25. 1925-26. 1926-27. 1927-28. 1928-29. 1929-30. 1930-31. 1931-32. 1932-33. 1933-34. 1934-35. 1935-36. 1936-37. 1937-38. 1938-39. 1939-40. 1940-41. 1941-42. 1942-43. 1943-44. 1944-45. 1945-46. 1946-47. 1947-48. 1948-49. 1949-50. 1950-51. 1951-52. 1952-53. 1953-54. 1954-55. 1955-56. 1956-57. 1957-58. 1958-59. 1959-60. 1960-61. 1961-62. 1962-63. 1963-64. 1964-65. 1965-66. 1966-67. 1967-68. 1968-69. 1969-70. 1970-71. 1971-72. 1972-73. 1973-74. 1974-75. 1975-76. 1976-77. 1977-78. 1978-79. 1979-80. 1980-81. 1981-82. 1982-83. 1983-84. 1984-85. 1985-86. 1986-87. 1987-88. 1988-89. 1989-90. 1990-91. 1991-92. 1992-93. 1993-94. 1994-95. 1995-96. 1996-97. 1997-98. 1998-99. 1999-00. 2000-01. 2001-02. 2002-03. 2003-04. 2004-05. 2005-06. 2006-07. 2007-08. 2008-09. 2009-10. 2010-11. 2011-12. 2012-13. 2013-14. 2014-15. 2015-16. 2016-17. 2017-18. 2018-19. 2019-20. 2020-21. 2021-22. 2022-23. 2023-24. 2024-25. 2025-26. 2026-27. 2027-28. 2028-29. 2029-30. 2030-31. 2031-32. 2032-33. 2033-34. 2034-35. 2035-36. 2036-37. 2037-38. 2038-39. 2039-40. 2040-41. 2041-42. 2042-43. 2043-44. 2044-45. 2045-46. 2046-47. 2047-48. 2048-49. 2049-50. 2050-51. 2051-52. 2052-53. 2053-54. 2054-55. 2055-56. 2056-57. 2057-58. 2058-59. 2059-60. 2060-61. 2061-62. 2062-63. 2063-64. 2064-65. 2065-66. 2066-67. 2067-68. 2068-69. 2069-70. 2070-71. 2071-72. 2072-73. 2073-74. 2074-75. 2075-76. 2076-77. 2077-78. 2078-79. 2079-80. 2080-81. 2081-82. 2082-83. 2083-84. 2084-85. 2085-86. 2086-87. 2087-88. 2088-89. 2089-90. 2090-91. 2091-92. 2092-93. 2093-94. 2094-95. 2095-96. 2096-97. 2097-98. 2098-99. 2099-00. 2100-01. 2101-02. 2102-03. 2103-04. 2104-05. 2105-06. 2106-07. 2107-08. 2108-09. 2109-10. 2110-11. 2111-12. 2112-13. 2113-14. 2114-15. 2115-16. 2116-17. 2117-18. 2118-19. 2119-20. 2120-21. 2121-22. 2122-23. 2123-24. 2124-25. 2125-26. 2126-27. 2127-28. 2128-29. 2129-30. 2130-31. 2131-32. 2132-33. 2133-34. 2134-35. 2135-36. 2136-37. 2137-38. 2138-39. 2139-40. 2140-41. 2141-42. 2142-43. 2143-44. 2144-45. 2145-46. 2146-47. 2147-48. 2148-49. 2149-50. 2150-51. 2151-52. 2152-53. 2153-54. 2154-55. 2155-56. 2156-57. 2157-58. 2158-59. 2159-60. 2160-61. 2161-62. 2162-63. 2163-64. 2164-65. 2165-66. 2166-67. 2167-68. 2168-69. 2169-70. 2170-71. 2171-72. 2172-73. 2173-74. 2174-75. 2175-76. 2176-77. 2177-78. 2178-79. 2179-80. 2180-81. 2181-82. 2182-83. 2183-84. 2184-85. 2185-86. 2186-87. 2187-88. 2188-89. 2189-90. 2190-91. 2191-92. 2192-93. 2193-94. 2194-95. 2195-96. 2196-97. 2197-98. 2198-99. 2199-00. 2200-01. 2201-02. 2202-03. 2203-04. 2204-05. 2205-06. 2206-07. 2207-08. 2208-09. 2209-10. 2210-11. 2211-12. 2212-13. 2213-14. 2214-15. 2215-16. 2216-17. 2217-18. 2218-19. 2219-20. 2220-21. 2221-22. 2222-23. 2223-24. 2224-25. 2225-26. 2226-27. 2227-28. 2228-29. 2229-30. 2230-31. 2231-32. 2232-33. 2233-34. 2234-35. 2235-36. 2236-37. 2237-38. 2238-39. 2239-40. 2240-41. 2241-42. 2242-43. 2243-44. 2244-45. 2245-46. 2246-47. 2247-48. 2248-49. 2249-50. 2250-51. 2251-52. 2252-53. 2253-54. 2254-55. 2255-56. 2256-57. 2257-58. 2258-59. 2259-60. 2260-61. 2261-62. 2262-63. 2263-64. 2264-65. 2265-66. 2266-67. 2267-68. 2268-69. 2269-70. 2270-71. 2271-72. 2272-73. 2273-74. 2274-75. 2275-76. 2276-77. 2277-78. 2278-79. 2279-80. 2280-81. 2281-82. 2282-83. 2283-84. 2284-85. 2285-86. 2286-87. 2287-88. 2288-89. 2289-90. 2290-91. 2291-92. 2292-93. 2293-94. 2294-95. 2295-96. 2296-97.

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<211> 34
<212> PRT
<213> Hepatitis B virus
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<210> 261
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<212> PRT
<213> Influenza A virus
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<210> 262
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<212> DNA
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89

<210> 263

<211> 16

<212> PRT

<213> Influenza A virus

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<210> 264

<211> 52

<212> DNA

<213> Influenza A virus

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<211> 11

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<213> Artificial Sequence

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<400> 265

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<210> 266

<211> 14

<212> PRT

<213> Hepatitis B virus

<400> 266

Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile Asp
1 5 10

<210> 267

<211> 27

<212> PRT

<213> Hepatitis B virus

<400> 267

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Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Asp
20 25

<210> 268

<211> 24

<212> PRT

<213> Hepatitis B virus

<400> 268

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp
20

<210> 269

<211> 27

<212> PRT

<213> Hepatitis B virus

<400> 269

Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Ser Arg Ser Asn Asp Ser Ser Asp Glu Leu Asp
20 25

<210> 270

<211> 38

<212> PRT

<213> Hepatitis B virus

<400> 270

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1 5 10 15

Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Leu Gly Trp Leu
20 25 30

Trp Gly Ile Asp Ile Asp
35

<210> 271

<211> 17

<212> PRT

<213> Influenza B virus

<400> 271

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Arg

<210> 272

<211> 13

<212> PRT

<213> Homo sapiens

<400> 272

Ala Pro Glu Trp Pro Gly Ser Arg Asp Lys Arg Thr Leu

1 5 10

<210> 273

<211> 9

<212> PRT

<213> Homo sapiens

<400> 273

Glu Asp Gly Gln Val Met Asp Val Asp
1 5

<210> 274

<211> 8

<212> PRT

<213> Homo sapiens

<400> 274

Ser Thr Thr Gln Glu Gly Glu Leu
1 5

<210> 275

<211> 10

<212> PRT

<213> Homo sapiens

<400> 275

Gly His Thr Phe Glu Asp Ser Thr Lys Lys
1 5 10

<210> 276

<211> 8

<212> PRT

<213> Homo sapiens

<213> Homo sapiens

<400> 280

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Ala

<210> 281

<211> 14

<212> PRT

<213> Homo sapiens

<400> 281

Met Ala Pro Glu Trp Pro Gly Ser Arg Asp Lys Arg Thr Leu
1 5 10

<210> 282

<211> 10

<212> PRT

<213> Homo sapiens

<400> 282

Met Glu Asp Gly Gln Val Met Asp Val Asp
1 5 10

<210> 283

<211> 9

<212> PRT

<213> Homo sapiens

<400> 283

Met Ser Thr Thr Gln Glu Gly Glu Leu
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$$\frac{\partial^2 \Phi}{\partial x_1^2} + \frac{\partial^2 \Phi}{\partial x_2^2} = -\frac{1}{\epsilon_0} \rho(x_1, x_2), \quad (1) \quad \frac{\partial \Phi}{\partial x_1} = 0, \quad \frac{\partial \Phi}{\partial x_2} = 0, \quad \text{at } x_1 = 0, \quad \text{and } x_2 = 0.$$

<211> 9

<212> PRT

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<400> 288

<210> 289

<211> 18

<212> PRT

<213> Homo sapiens

<400> 289

Pro Ala

<210> 290

<211> 42

<212> DNA

<213> Hepatitis B virus

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42